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ABSTRACT

This article describes how one high school addressed the time-consuming problem of registration by looking at an electronic solution. Typically counselors were spending 50-60% of their time with registration and schedule change. This school worked with a software company to produce an Internet/telephone registration system. The system took into account other problems faced by counselors, including planning information being stored in paper files; counselors, students, and parents not having easy access to these documents; and students not having easy access to college and career information. With this new system in place, counselors now know much more about each student's needs and progress in school, plus they are able to spend more time each day implementing the comprehensive guidance program. (Contains 6 figures.) (JDM)

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Solving the "Time and Information" Dilemma through Technology: Electronic Student Registration and Data Systems

by

Bruce Evans
Scott Ward

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Chapter Twelve

Solving the "Time and Information" Dilemma through Technology: *Electronic Student Registration and Data Systems*

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Time and information—for a comprehensive guidance counselor that's what it is all about really. Given enough time and good information about a student's wants and needs counselors are able to do a great job in guiding and counseling that student. The problem is how to find enough time in a day to do all the things that are expected and still have the time (and sanity) to guide students successfully. The following is a quick look at problems and solutions to the "time and information" dilemma.

Problem: Registration

A normal year in our lives as counselors used to go something like this: A month or two before school ended in the spring, we would hand out registration materials and ask the students to make "registration requests" for the next year. The scan sheets they filled out requesting courses would be computerized and eventually we would have complete schedules for all but 10% of our student body. We would work with the last 10% to complete their schedules, and then sometime in the summer, fall schedules would be sent to all students. This would normally happen in August, and within a day or two students and their parents would begin lining up in the counseling center to change their schedules. Even though students had individually requested the courses they received, they had for some reason changed their minds over the summer and now wanted different classes, different teachers, or a different period. The line of students and parents would lengthen as school started and would remain for four or five weeks into the first term. By the time counselors finished

orienting new students, helping students who had incomplete schedules, and enduring students who just wanted to change their schedules, they discovered that nearly 100% of the student body had been helped at least once. After completing that process, counselors would have about one hour to lick their wounds before other responsibilities would kick in—not the least of which would be registering students for second semester. Add in some graduation responsibilities and a little bit of personal counseling and crisis management, and by the end of the year, counselors were only about 150 days behind.

Considering all of the preceding issues combined with the great concept and responsibility of comprehensive guidance and counseling, we were soon painfully aware that there was no way under our current mode of operation to make everything happen. Our frustration level caused us to ask our computer programmers if they could track the number of class changes that took place each semester after we had sent out the original course schedules. It was no great surprise to discover that students were changing more than 70% of the courses they had requested in the spring. They were accomplishing this by coming into the counseling center personally, sending Mom or Dad to the counseling center, calling the principal, calling the superintendent, crying, yelling, or using whatever other method would get them the schedule they thought they really wanted.

We soon understood a very important concept: The longer the interval between the time students registered and the time school actually began, the greater the chance that students would change their minds about what they wanted. And in the resulting class change process, counselors were being emotionally beaten up by a constant stream of upset or angry people coming to their offices requesting changes that in most cases were very difficult to accommodate.

Based on this revelation, we were forced to look at other options almost as a matter of self-preservation, if for no other reason. We could force students to stay with the courses they had requested in the spring, we could register students a day or two before school started in an arena registration, we could continue the crazy things we had been doing, or we could try to find some totally new concept and process that would work better than any of these options.

We also had another big problem. In the little bit of time left after registration was over, we were doing our best to provide each student with career guidance and individual help in designing a four-year high school course plan. We were also working with students to update the details of their course plan for the next year. We discovered that after all our good work in designing a course plan, when it came time for students to register, our planning had very little bearing on what courses they actually took. The most likely determiner of

which courses students registered for was the classes their friends were taking. We felt that all of our careful planning went almost completely unheeded.

Problem: Student Data Used in Planning and Guidance

Along with the registration nightmare, we found several other items that were being done either in a very time-consuming way or with incomplete information, complicating both counselors' and students' lives. These were some of the obstacles we faced:

- planning information being stored in paper files;
- counselors not having easy access to the information;
- students and parents not having easy access to the information;
- no follow-through at the time of registration;
- counselors hand-writing and recording students' progress toward graduation;
- counselors delivering career information from written sources that were only periodically updated; and
- students not having easy access to college and career information.

Solution: Electronic Registration System

If counselors wished to deliver guidance and counseling services to all students, it was neither possible nor reasonable to continue to handle registration in a time-consuming way. By tradition, the counselors had become registration and course-changing experts, and that process used up about 50% to 60% of their time. To solve this problem, we partnered with a local software company to produce an Internet/telephone registration system. (There was at the time nothing on the market that provided the controls needed for a high school registration system.) With this electronic registration system, counselors are no longer the "gatekeepers" for class changes. The counselors' role is to guide, advise, inform, and in general be an information resource to students. The system works as follows:

1. The electronic counselor in electronic registration
   a. After counselors provide guidance to all students and approve their four-year course plans, the plans are computerized and linked to the electronic registration system.
   b. The registration system can monitor whether students select classes that follow their four-year guidance plan.
   c. Categories of required courses are tracked through a concept called CORE. For example, if in his or her guidance plan, a student has elected

to take biology in 10th grade, CORE allows the student scheduling flexibility to select any science course. During registration if a student selects a science class other than biology that new course is then allowed in place of biology. All CORE requirements must be scheduled before a student can schedule electives. Counselors have the ability through the registration system to designate which courses in a subject area will meet CORE requirements by grade and pathway. (See sample screen in Figure 1.)

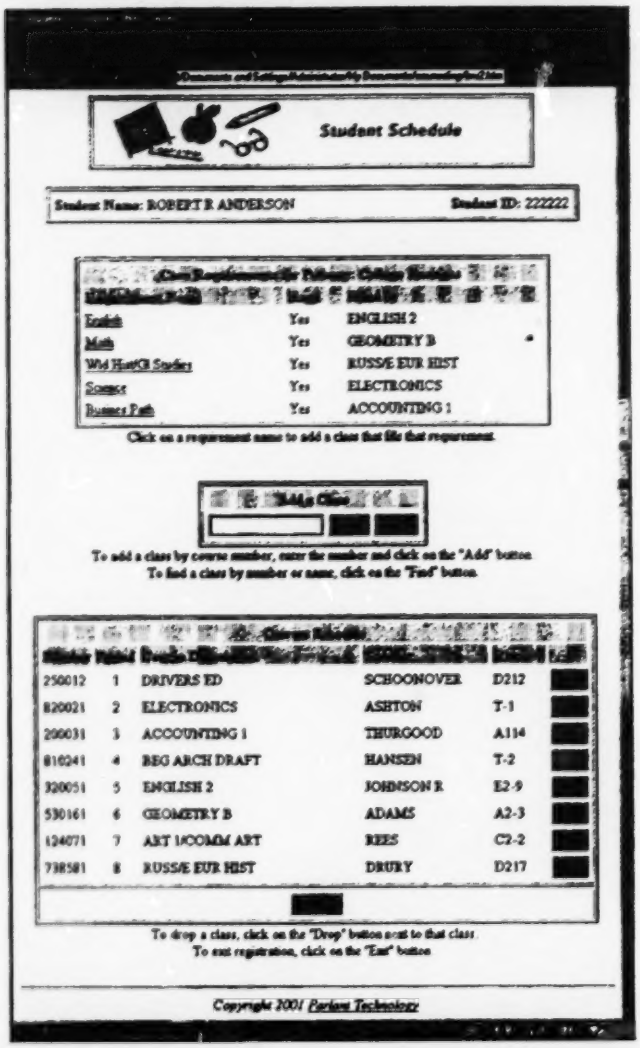
Student Schedule
Student Name: ROBERT R ANDERSON
Student ID: 222222
Yes ENGLISH 2
Yes GEOMETRY B
Yes RUSS/E EUR HIST
Yes ELECTRONICS
Yes ACCOUNTING 1
250012 1 DRIVERS ED SCHOONOVER D212
820021 2 ELECTRONICS ASHTON T-1
200031 3 ACCOUNTING 1 THURGOOD A114
810241 4 BEG ARCH DRAFT HANSEN T-2
320051 5 ENGLISH 2 JOHNSON R E2-9
530161 6 GEOMETRY B ADAMS A2-3
124071 7 ART I/COMM ART REES C2-2
738581 8 RUSS/E EUR HIST DRURY D217
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Figure 1: Student Registration Screen Showing Sample CORE Requirements

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a. Students register on the Internet or by telephone during the three weeks immediately preceding the start of school. The registration system is also open for three days after school begins.
b. Students choose their classes, periods, and teachers. Because in the past students had come to the counselors and complained until they got their way, we decided to let them have their own way from the beginning. We were very concerned that students might choose the wrong courses, gang up on a particular teacher to make his or her life miserable, or make other inappropriate choices, none of which has come to pass. Students have proven that when they have all the opportunities to choose the best courses for them, they are able to make wise scheduling choices.
c. After the third day of school, the system is shut off and students are locked into their classes. We give them the three-day window so that if they feel they have made a bad decision about a class, they can make a change on a space-available basis. The only changes allowed after the third day are for emergency situations and must be individually approved by the teachers involved and the principal. (Again, counselors have relinquished the role of "gatekeepers" in registration.)
d. The percentage of counselor time spent in the registration and course-changing process has been reduced from approximately 50% or 60% to less than 10%. The time saved is now used to deliver comprehensive guidance services to all students.
e. Electronic registration has the ability to keep general track of what courses a counselor, student, and parents have agreed the student should take. For example, if a student is interested in medicine and selects a science "pathway," the computer is programmed to require a science course each year. It does not require that the science course scheduled be the exact course planned, but it does not allow the student to register for any electives until the science requirement is met. This allows the student flexibility without compromising the good guidance decisions that have been made earlier.

The Provo High School Internet/phone registration system requires a student ID number and password for access, so it cannot be viewed by non-students. However, an instructional demo can be reached through the Provo High School home page at www.phs.provo.k12.ut.us. From the home page, click on "Registration," then "Log in to Parentlink," then "Click here for a product demonstration." From there simply follow

the on-screen instructions. For more information or for assistance, contact the authors.

Solution: Electronic Planning

There is no panacea to solve all the guidance and planning problems faced by counselors, students, and parents. However, we have found a few strategies to be of great benefit in the guidance process. Most schools have students plan out the courses they will take throughout high school. A program written by one of our computer programming students allows incoming freshmen enter their four-year plan into the computer. Among other things, the student must decide whether to set a goal of entering a university or college after high school (see Figure 2). Statistically about 70% of freshmen will tell counselors their goal is to enter a university after graduation from high school. However, if left on their own at registration time, only 15% will register for the correct courses to meet university entrance requirements. Using this guidance plan, 40% of students select a university pathway, and the Internet/phone registration system causes the same 40% to select the appropriate university preparatory courses each year.

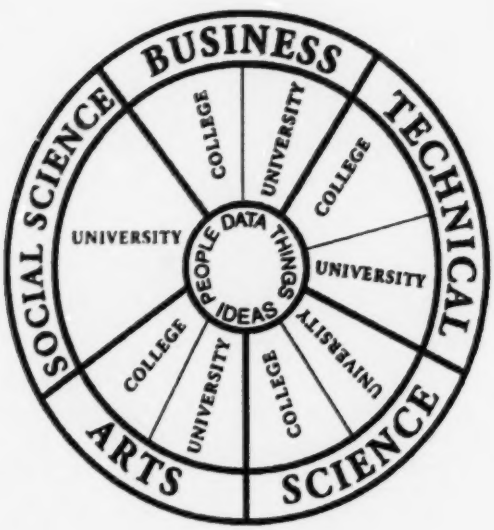

Figure 2. Education Career Pathways in Freshman Four-Year Plan

We have found that an interesting thing happens when students understand that the decisions they make in the guidance process influence what courses they are able to take when they actually register. Students begin to pay attention and plan meaningful schedules. Using an electronic registration system enables electronic monitoring of every registration and causes students to register for the classes required for their grade and pathway.

Provo High School Six-Step Plan to Comprehensive Guidance Individual Planning

The six-step process diagrammed in Figure 3 and described in the following text helps students receive good guidance and make much better decisions. The outer circle in Figure 3 represents the decision-making/exploration sequence, and the inner circle represents the update and follow-up piece that results in good course decisions at the time of registration.

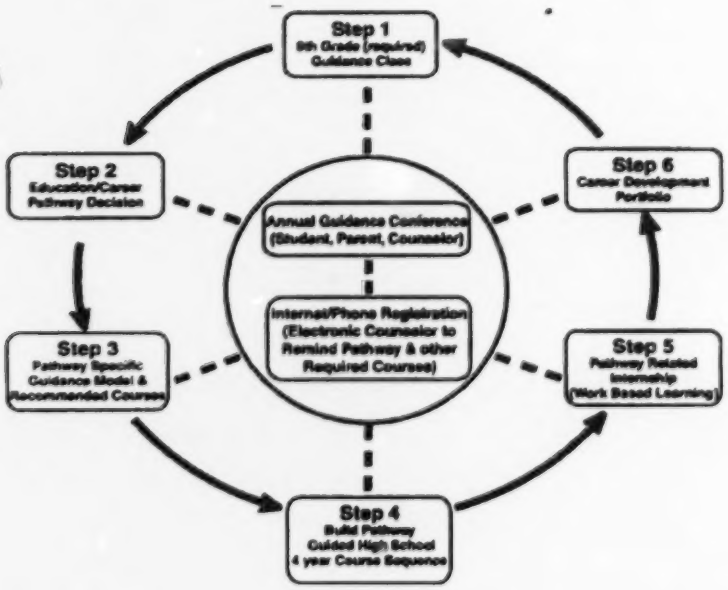

Figure 3. SEOP Process for Comprehensive Guidance Individual Planning

Step 1: Students spend one semester (18 weeks) in an SEOP (student education occupation plan)/information processing class. We use a 12-step process in the class to prepare students to make the necessary decisions so that high school can be of the most value possible. The Next Step Planning materials guide the process.

Step 2: The primary guiding decision that directs students' class selection and sequence is their education/career pathway decision. This decision (assisted by the Internet/phone registration system) results in students being prepared for what they will do after high school. This decision also affects their graduation requirements and internship opportunities.

Step 3: When students make an education/career pathway decision, they are given a planning worksheet that suggests course sequences and outlines options. Although it gives important guidance, the plan still includes high school–appropriate guided flexibility. This written guidance model also includes information about career options available for students interested in that pathway.

Step 4: Using the pathway guidance model provided, students all chart four-year class "pathway through the forest" sequences to graduation that prepare them for their post–high school plans.

Step 5: After taking pathway-related courses in school, students are linked with internships providing quality job experience relating to their current interests and career goals. Students gain exposure and hands-on opportunities in areas where they normally could not get practical experience. Many students get a "leg up" on jobs relating to their interests, and they are able to improve their college and work portfolios through the internship experience.

Step 6: Students prepare a career development portfolio to present to prospective employers, scholarship committees, or others that have some say in a student's future. Employers in the county expect prospective employees to present their skill qualifications through the career development portfolio. Students are motivated to prepare the portfolio based on their internship experiences. Establishing the importance of the portfolio and motivating students to create one are important parts of the program.

Note: Parents are invited to the school each year to meet with their child and a counselor to review and approve the student SEOP decisions. They also receive information about courses, college planning, apprenticeships, internships, scholarships, etc., relevant to the student's grade level.

Electronic Access to Student Data

Most districts store an incredible amount of data on their computer systems. As we began to consider how best to use these data, we developed several menus to provide counselors with time-saving information from district and school databases. Once you start thinking in terms of what would be helpful and save time, you will find many tasks that the computer can do for you. Following are some of the menu items available from every counselor's computer. A student or parent can access the items marked with an asterisk (*) on any computer in the school or over the Internet. (Password protection ensures that students/parents can view only their own personal information, not information about other students.)

Class schedule*	Looks up the schedule of any student
Class requests*	Makes requests for next semester's or next year's classes (student operated)
Credit evaluation*	Evaluates each student's credits and lists which categories and amounts of credit are still needed to graduate (see Figure 4)
Counselor conference notes	Creates private notes or academic/graduation notes for viewing by any counselor
Midyear new student registration	Creates a grid of desired courses with available seats (see Figure 5)
Four-year course plans*	Displays a student's four-year plan (see Figure 6)
Student biographical information	Contains address, phone number, birth date, and other identifying information
What to take to fulfill a required graduation category*	Lists courses that will fill each required category

Report cards*	Shows both current and past report cards for a student
Attendance*	Shows absences and tardies for any student (This information can be appended to the bottom of most other student reports.)
Current term progress grades*	Displays grades to date in current courses for any student.
Status on each assignment in each class*	Displays all assignments and scores for each assignment.
Student search—Identifying students who meet certain positive or negative categories	Searches all students by specific parameters (e.g., all students who are behind in credit, have excessive absences, have a particular GPA or GPAs higher/lower than a certain level, have chosen a particular pathway)
Course offering list	Lists all courses taught in the high school
Printed master schedule for students*	Creates or prints a master schedule for students to use at registration time
Notes to teachers	Creates a note to be sent to a teacher about a particular student
Class lists—course sections	Creates a list of students in a particular class
Grade point average*	Shows the GPA of any student
Class rank*	Shows the class rank of any student
Student count by gender, ethnicity, handicap, multilingual	Shows both the number of students in each category and their names

Look up student by first name	Looks up all students with a particular first name (This option is helpful when the counselor cannot remember a student's last name.)
Standardized test results	Looks up a student's scores on ACT, SAT, and other tests
Students with complete schedules	Shows all students with complete schedules
Student with incomplete schedules	Shows all students with incomplete schedules
Immunization record	Shows a complete record of immunizations for a student
Electronic note to teacher to summon student from class	Creates a request to have a student sent to the counseling center from a classroom
Electronic student photograph	Displays a photo of any student
Identify students by group in a given pathway	Finds all students who have chosen the same pathway

As examples of the information accessed from these various menu options, a credit evaluation screen, a new student registration screen, and a four-year plan screen are shown in Figures 4, 5, and 6. The credit evaluation form shown in Figure 4 electronically evaluates the credit a student earns at each high school grade level and then lists what requirements still must be met for the student to graduate. Counselors, administrators, students, and parents can view this information, which is password-protected, on any computer in the school or over the Internet. In addition, this information is handed out to each student with the registration materials.

In the past, when a new student registered in the middle of a term, counselors would have had to spend one or two hours finding available courses and creating a workable schedule that met the student's needs. The midyear new student registration menu item allows the counselor to type in the courses the student wishes to take, then the computer creates a grid showing only those

Credit Evaluation

Student # 111111 Student Name John Smith Grade 11 Term 3 375-0000 April 26, 2001

Educ Path University Career Code 020201

Career Path Science Specific Path Biological

Category	Req	9th	10th	11th	12th	total	need	curr	comb	bal
	transcript history								This semester forecast	
English	4.00	1.00	1.00	.50	-	2.50	1.50	.50	3.00	1.00
Fine Arts	1.50	-	-	.50	-	.50	1.00	-	0.50	1.00
Geography	0.50	0.50	-	-	-	0.50	-	-	0.50	-
US History	1.00	-	-	0.50	-	0.50	0.50	0.50	1.00	-
Global Studies	0.50	-	0.50	-	-	0.50	-	-	0.50	-
World History	0.50	-	0.50	-	-	0.50	-	-	0.50	-
Social Studies	0.50	-	-	-	-	-	0.50	-	-	0.50
Mathematics	2.00	1.00	1.00	-	-	2.00	-	0.50	2.50	-
Life Science	1.00	1.00	-	-	-	1.00	-	0.50	1.50	-
Physical Science	1.00	-	1.00	-	-	1.00	-	-	1.00	-
Health	0.50	-	0.50	-	-	0.50	-	-	0.50	-
PE -Core	1.00	1.00	-	-	-	1.00	-	-	1.00	-
PE - Elect	0.50	-	-	-	-	-	0.50	0.50	0.50 *	-
Practical Arts	1.50	-	0.50	0.50	-	1.00	0.50	0.50	1.50	-
SEOP	0.50	0.50	-	-	-	0.50	-	-	0.50	-
Advanced Studies	2.00	-	1.00	1.00	-	2.00	-	-	2.00	-
Elective	4.50	1.00	0.25	-	-	1.25	3.25	-	1.25	2.25
Total 9 - 12	23.0	6.00	6.25	3.00	-	15.25	7.75	3.00	18.25	4.75

Figure 4. Sample Credit Evaluation Screen

courses that still have seats available (see Figure 5). Within about two minutes the counselor can create a workable schedule for the student. The four-year course plan in Figure 6 can be printed out and given to each student at registration time as a reminder of which courses he or she had planned to take.

Other Useful Electronically Accessible Guidance Tools

In addition, several commercially available computer software programs have become helpful in the process of delivering good guidance to students. Among these are *Choices* (Ogdensburg, NY: Careerware),

New Student Registration

83401 Grade 11 Semester 02

#### Subject	1	2	3	4	5	6	7	8
9000 Release Time		21 10 22* 39		42 3	51 2 52 9	62 9		81 3 82 13 83 12
3310 American Lit Hon			31* 8					
6820 AP Biology				41* 24				
7300 US History	11 3		31 7 32 8	41 25		31 13	71 3 72 10	81 18
6398 Sports Med 2					51 19	61* 3		
5448 AP Statistics							71* 3	
6030 Mod Dance 1								81* 2

re-enter numbers or end (R/E) ?

Figure 5. Sample Midyear New Student Registration Screen

Discover (Iowa City: ACT-Discover) and other programs that allow students to explore interests, colleges, or financial information. Much of the same information that most software packages deliver is also available over the Internet.

Conclusion

Like all humans, counselors tend to continue to do things the way they have always done them. For the most part program changes come about slowly because counselors don't have the time to consider (let alone implement) new ideas. The system presented in this chapter did not happen all at once. Changes came one at a time over the course of years. The overall effect, however, is that the face of counseling at Provo High School has changed. By accessing data electronically, counselors now know much more about each student's needs and progress in school. They also are able to spend a much greater portion of their day

SEOP Student Courses for Provo High School

Four-Year Plan

Student # 111111 | Student Name John Smith | Grade 11 | April 28, 2001

Educ Path University | Career Code 020201

Career Path Science | Specific Path Biological

SEOP Conference Notes:

9th Semester 1	10th Semester 1	11th Semester 1	12th Semester 1
3150 ENGLISH 1H	3250 ENGLISH 2H	3310 AMER LIT H	3475 COLL WRI H
5201 ALGEBRA 2A	5450 PRE CALC A	5501 AP CALCLUS	6675 AP CHEM
7100 GEOGRAPHY	7390 M EAST HIS	7310 US HIST H	6390 INTRO EMT
6081 INTRO PE-G	6646 CHEMSTRY H	6620 BIOLOGY AP	9419 TRIG 106
4320 SPANISH 2	4325 SPANISH 3H	4355 AP SPANIS4	4700 CHIL DEVE
6610 BIOLOGY H	6755 PHYSIOL H	5941 PHIL ORCH	5941 PHIL ORCH
9000 REL TIME	9000 REL TIME	9000 REL TIME	9000 REL TIME
9th Semester 2	**10th Semester 2**	**11th Semester 2**	**12th Semester 2**
3150 ENGLISH 1H	3250 ENGLISH 2H	3310 AMER LIT H	3475 COLL WRI H
5202 ALGEBRA 2B	5451 PRE CALC B	5501 AP CALCLUS	6675 AP CHEM
2222 SEOP	6646 CHEMSTRY H	7310 US HIST H	4701 AD CHD DEV
6081 INTRO PE-G	4325 SPANISH 3H	6620 BIOLOGY AP	5941 PHIL ORCH
4320 SPANISH 2	6755 PHYSIOL H	4355 AP SPANIS4	9000 REL TIME
6610 BIOLOGY H	9000 REL TIME	5941 PHIL ORCH	1225 MATC CNA
9000 REL TIME	7160 MOD HIST	9000 REL TIME	

Code to be entered / 'C'redit evaluation / 'N'otes ?

Figure 6. Sample Four-Year Plan Screen

implementing the comprehensive guidance program and much less time scheduling classes and handling paperwork.

About the Authors

Bruce Evans is director of counseling at Provo High School in Utah. He has worked in education for 30 years as both a classroom teacher and high school counselor. He has been honored as Utah Counselor of the Year, and under his guidance Provo High School received the National Planning for Life Award in 1998. The Internet/telephone system described in this article is his design. He has extensive experience as a national presenter, presenting at several conferences and workshops each year. Bruce can be reached at (801) 373-6550, ext. 337 or brucee@provo.k12.ut.us.

Scott Ward is internship director at Provo High School in Utah. In his 28 years as an educator, he has focused on the process of providing relevant work-based learning for students. Currently he is president of the Work Based Learning Division of the Utah Association for Career and Technical Education. He has presented at the National Society of Experiential Education (NSEE) and the Association for Career and Technical Education (ACTE), and currently does one- and two-day training workshops for several districts around the country. Scott can be reached at 801-370-4603 or at scottw@provo.k12.ut.us.